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10/715,840	11/19/2003	**Minoru Oogushi**	ASAM.0093	3616

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EXAMINER	
CHU, WUTCHUNG	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/715,840	OOGUSHI, MINORU	
	Examiner	Art Unit	
	WUTCHUNG CHU	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/7/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/29/2008 has been entered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-12, 14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miki et al. (US2007/0110060) in view of Shen. (US6907039).

Regarding claim 1, Miki et al. disclose packet switching apparatus comprising:

- a controller **(see figure 2 ref11 control unit and paragraph 41)** which triggers an L2TP Network Server (LNS) function of terminating a plurality of L2TP tunnels or an L2TP Access Concentrator (LAC) function of initiating a plurality of L2TP tunnels **(see paragraphs 40 and 41)** for

- a plurality of communication I/Fs to transmit and receive packets **(see paragraph 41 line 7-25 external transmission line)**;

- a plurality of first logical interfaces multiplexed to handle a plurality of protocols **(see figure 1 ref MN11 telephone network, MN12 DSL, and MoN12 Mobile node and it is inherent that for these different networks to have different protocols and paragraphs 41 where low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode; and paragraph 42 the access node retains a table which a plurality of sessions for packet transmission based on PPP or the like can be registered)** on the communication I/Fs respectively so as to transmit and receive packets to and from user terminals according to a respective protocol and per packet processing action **(see paragraphs 41 and 42 a plurality of sessions for packet transmission based on PPP or the like can be registered and figure 3**

contains common data to be used for setting up a session in relatively low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode);

- a plurality of second logical interfaces multiplexed to handle a plurality of protocols **(see figure 1 ref MN11 telephone network, MN12 DSL, and MoN12 Mobile node and it is inherent that for these different networks to have different protocols and paragraphs 41 where low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode; and paragraph 42 the access node retains a table which a plurality of sessions for packet transmission based on PPP or the like can be registered)** on the communication I/Fs respectively so as to transmit and receive packets to and from backbone networks according to a respective protocol and per packet processing action **(see paragraphs 41 and 42 a plurality of sessions for packet transmission based on PPP or the like can be registered and figure 3 contains common data to be used for setting up a session in relatively low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode)**;

- associating a respective virtual router to one of the communication I/Fs as an input I/F, one of the communication I/Fs as an output I/F, one of the first logical interfaces, and one of the second logical interfaces per packet processing action **(see paragraph 41 line 40)**;

- and the packets are processed according to a respective protocol and per packet processing action **(see paragraphs 41 and 42 a plurality of sessions for packet transmission based on PPP or the like can be registered and figure 3 contains common data to be used for setting up a session in relatively low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode);**

Miki et al. disclose all the subject matter of the claimed invention with the exception of:

- a plurality of virtual routers accommodated therein and utilizes a routing information table to support each one of the virtual routers to perform routing actions independently from other virtual routers;
- a memory stored with the routing information table of the plurality of virtual routers which includes a plurality of individual routing table s each corresponding to one of the virtual routers;
- wherein packets received from the first logical interface are forwarded to one of the second logical interfaces associated with the respective virtual router according to the individual routing table corresponding to the respective virtual router associated with the first logical interface.
- according to the respective routing table of the respective virtual router.

Shen from the same or similar fields of endeavor teaches the use of virtual routers and routing tables **(see Shen figure 3A where each virtual router has its own routing**

table and col. 5 lines 26-53), building the exterior gateway routing table **(see Shen col. 2 lines 51-67)**; logical interface **(see Shen col. 3 lines 15-23)**, and next hop interface **(see Shen col. 4 lines 25-45)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the virtual routers and routing tables as taught by Shen in the packet switching apparatus of Miki et al. in order to Provide virtual routers and capability of a single network element to behave as multiple routers.

Regarding claim 2, Miki et al. teaches

- wherein the controller triggers **(see figure 2 ref11 control unit and paragraph 41)** the LAC function **(see paragraph 40)**;
- a communication I/F to transmit and receive, to and from the user terminals the first logical interface is one of PPP frames assigned among the communication I/Fs **(see paragraph 41)** or a logical interface corresponding to one of PPP sessions **(see paragraph 43 line 3-12)**;
- the second interface transmits and receives L2TP packets **(see paragraph 40)**;

Regarding claim 3, Miki et al. teaches

- wherein the controller triggers **(see figure 2 ref11 control unit and paragraph 41)** the LAC function **(see paragraph 40)**;

- the first logical interface is a logical interface corresponding to one of the L2TP tunnels is the first logical interface **(see paragraph 42 input tunnel identifier and paragraph 44)**;

- the second interface to transmits and receives L2TP packets **(see paragraphs 42 figure 7)**;

- the LAC function associates each of PPP sessions from a user terminal with the corresponding first logical interface **(see paragraph 45 and figure 5)**.

Regarding claim 4, Miki et al. teaches

- wherein the controller triggers **(see figure 2 ref11 control unit and paragraph 41)** the LNS function **(see paragraph 40)**;

- the first logical interface is a communication I/F to transmit and receive L2TP packets assigned among the plurality of communication I/Fs **(see figure 10 tunnel TL 11—14 and paragraphs 44 and 47)** or a logical interface corresponding to one of L2TP tunnels **(see figure 10 tunnel TL 11—14 and paragraph 42 and 43);**

- the second interface transmit and receive packets to and from backbone networks **(see figure 7 &8 and paragraph 47)**;

Regarding claim 5, Miki et al. teaches

- wherein the controller triggers **(see figure 2 ref11 control unit and paragraph 41)** the LNS function **(see paragraph 40)**;

- the first logical interface is a logical interface corresponding to one of received PPP sessions **(see paragraph 41 line 27, and paragraph 42 input tunnel identifier)**;

- the second interface transmits and receives IP packets to and from backbone networks **(see paragraph 41 line 27, and paragraph 42 output tunnel identifier)**;

- the LNS function associates each of the PPP sessions multiplexed to a L2TP tunnel with the corresponding first logical interface **(see paragraph 41 line 33 and paragraph 46)**.

Regarding claim 6, Miki et al. teaches memory further stores a table includes a virtual router field for storing virtual router identifiers, a destination IP address field for storing destination IP addresses of received packets, an address mask field for storing an address mask, a self-address field for storing an identifier indicating whether a packet to be processed is a self-addressed packet or not **(see paragraphs 42 and 43)**, a next hop address field for storing an address of a next hop node, a physical I/F field for storing physical I/F identifiers, and a logical I/F field for storing logical I/F identifiers**(see paragraphs 42-45)**

Regarding claim 7, Miki et al. teaches a correspondence between the first logical interfaces and the virtual routers and the correspondence between the second logical interfaces and the virtual routers can be changed by a control command received by one of the communication I/Fs **(see paragraph 51 upgrading to advanced network services and operation of existing services and it is inherent that control command is received by one of the communication I/Fs)**.

Regarding claims 8 and 9, Miki et al. disclose packet switching apparatus comprising:

- a plurality of communication I/Fs to connect to external communication lines packets **(see paragraph 41 line 7-8)**;
- a processor which executes predetermined processing on packets transmitted and received through the a user terminal **(see figure 2 box 13n input session processing unit and box 14n output session processing unit)**; and
- a memory which stores reference information used to execute predetermined packet processing actions on received packets **(see paragraphs 41 and 42 a plurality of sessions for packet transmission based on PPP or the like can be registered and figure 3 contains common data to be used for setting up a session in relatively low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode)**;

- wherein the memory stores: the interface table holding a relation among a physical interface identifier and at least one logical interface identifier **(see figures 3 and 4)** of the received packet, an identifier representing a protocol supported by the logical interface, information specifying a packet processing action to be executed based upon the protocol, and a virtual router identifier **(see paragraphs 42-45 and figures 3 and 4)**; and

- a plurality of the logical interfaces are multiplexed to handle a plurality of protocols on the communication I/Fs respectively so as to transmit and receive packets to and from user terminals according to a respective protocol and per packet processing action **(see figure 1 ref MN11 telephone network, MN12 DSL, and MoN12 Mobile node and it is inherent that for these different networks to have different protocols and paragraphs 41 where low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode; and paragraph 42 the access node retains a table which a plurality of sessions for packet transmission based on PPP or the like can be registered)**; and

- a routing information table holding routing information to be processed by routers corresponding to the virtual router identifiers **(see figure 3 and 4)**;

- wherein the processor **(see figure 2 box 13n input session processing unit and box 14n output session processing unit)** refers to the interface table and identifies an identifier of a virtual router **(see paragraph 42-43)** that

corresponds to a respective L2TP tunnel to process the received packets **(see paragraph 42 and 45)** and

- reads from the routing information table routing information managed by the virtual router corresponding to the virtual router identifier and forwards the received packets **(see paragraph 41 line 30-46)**.

- from an receiving logical interface to another interface associated with a respective virtual router **(see figures 3 and 4)**, and the processor processes a received packet according to a respective protocol and per packet processing action **(see paragraphs 41 and 42 a plurality of sessions for packet transmission based on PPP or the like can be registered and figure 3 contains common data to be used for setting up a session in relatively low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode).**

Miki et al. disclose all the subject matter of the claimed invention with the exception of:

- utilizes an interface table to support each of a plurality of virtual routers accommodated therein to perform routing actions independently from other virtual routers;
- according to a respective individual routing table of the respective virtual router

- (claim 9) the interface table and the routing information table are stored in different memories

Shen from the same or similar fields of endeavor teaches the use of virtual routers and routing tables **(see Shen figure 3A where each virtual router has its own routing table and col. 5 lines 26-53)**, building the exterior gateway routing table **(see Shen col. 2 lines 51-67)**; logical interface **(see Shen col. 3 lines 15-23)**, and next hop interface **(see Shen col. 4 lines 25-45)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the virtual routers and routing tables as taught by Shen in the packet switching apparatus of Miki et al. in order to Provide virtual routers and capability of a single network element to behave as multiple routers.

Regarding claim 10, Miki et al. teaches L2TP tunnel identifiers **(see paragraph 42 line 9)**, PPP session identifiers **(see paragraph 42 line 10)** or identifiers of Internet service providers connected through external communication lines are used as the logical interface identifiers **(see paragraph 41 line 21-25)**.

Regarding claim 11, Miki et al. teaches port numbers of the plurality of communication I/Fs **(see paragraph 41 line 21)** are used as the physical interface identifiers **(see paragraph 42 line 9)**.

Regarding claim 12, Miki et al. teaches

wherein the processor **(see figure 2 box 13n input session processing unit and box 14n output session processing unit)** executes an L2TP Access

Concentrator (LAC) function **(see paragraph 40)** of terminating a plurality of L2TP tunnels or an L2TP Access Concentrator (LAC) function of initiating a plurality of L2TP tunnels for the plurality of virtual routers accommodated therein **(see paragraph 44)**.

Regarding claim 14, Miki et al. teaches further comprising a means for switching between the LAC function and the LNS function **(see paragraph 40 line 15-17)**.

Regarding claim 16, Miki et al. teaches further comprising:

- a program memory storing a program, the program for analyzing contents of management control commands received by the communication I/Fs **(see figure 2 box 13n input session processing unit and box 14n output session processing unit it is inherent that processing unit is run by a program)**;

- wherein the processor executes the management control commands to authorize, according to a contract, control command sources to change settings in the interface tables corresponding to all the virtual routers **(see paragraph 51 line 2-5)**.

Regarding claim 17, Miki et al. teaches the processor executes the management control commands to authorize a particular control command source to change settings in the interface table corresponding to a particular virtual router **(see paragraph 51 line 6-15)**.

Regarding claim 18, Miki et al. disclose packet switching apparatus comprising:

- providing the virtual access router including a plurality of communication I/Fs to connect to external communication lines **(see paragraph 41 line 7-8)**;

- a processor which executes predetermined processing on packets transmitted and received through the terminal **(see figure 2 box 13n input session processing unit and box 14n output session processing unit)**; and

- a memory which stores reference information used to execute predetermined packet processing action on received packets **(see paragraph 42 line 1 retains a table and paragraph 43 retains a table)**;

- wherein the memory stores; the interface table holding, for each of interfaces, a relation among a physical interface identifier and at least one logical interface identifier of the received packet, an identifier representing a protocol supported by the logical interface **(see figures 3 and 4)**, information specifying a packet processing action to be executed based upon the protocol, and a virtual router identifier **(see paragraphs 41-43 a plurality of sessions for packet transmission based on PPP or the like can be registered and figures 3 and 4 contains common data to be used for setting up a session in relatively low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode)**; and

- and a plurality of the logical interfaces are multiplexed to handle a plurality of protocols on the communication I/Fs respectively so as to transmit and receive packet to and from user terminals according to a respective protocol and per packet processing action **(see paragraphs 41-43 a plurality of sessions for packet transmission based on PPP or the like can be registered and figures 3 and 4 contains common data to be used for setting up a session in relatively low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode)**;

- a routing information table holding routing information to be processed by routers corresponding to the virtual router identifiers, respectively **(see figure 3 and 4)**;

- wherein the processor refers to the interface table and identifies an identifier of a virtual router that corresponds to a respective L2TP tunnel to process the received packets **(see paragraph 41 line 30-46)** and

- reads from the routing information table routing information managed by the virtual router corresponding to the virtual router identifier and forwards the received packets **(see paragraph 41 line 30-46)** from an receiving logical interface to another interface associated with a respective virtual router, and the processor processes a received packet according to a respective protocol and per packet processing action according to a

respective individual routing table of the respective virtual router **(see paragraphs 41 and 42 a plurality of sessions for packet transmission based on PPP or the like can be registered and figure 3 contains common data to be used for setting up a session in relatively low-speed IP connection mode, high-speed IP connection mode, or mobile network IP connection mode)**;

- a program memory storing a program, the program for analyzing contents of management control commands received by the communication I/Fs **(see figure 2 box 13n input session processing unit and box 14n output session processing unit it is inherent that processing unit is executed by a program)**;

- wherein the processor executes the management control commands to authorize, according to a contract, control command sources to change setting in the interface tables corresponding to all the virtual routers **(see paragraph 51 line 2-5)**,

- wherein the processor executes the management control commands to authorize a particular control command source to change settings in the interface table corresponding to a particular virtual router **(see paragraph 51 line 2-5)**;

- by a communication carrier who owns or manages the virtual access routers associating interfaces connecting to networks of other

communication carriers with particular virtual routers **(see paragraph 41 line 21-25)** and transferring to the other communication carriers **(see paragraph 44)** authorities to use management control commands corresponding to the virtual routers **(see paragraph 51 line 2-5)**.

Miki et al. disclose all the subject matter of the claimed invention with the exception of:

- utilizes an interface table to support each of a plurality of virtual routers accommodated therein to perform routing actions independently from other virtual routers;

Shen from the same or similar fields of endeavor teaches the use of virtual routers and routing tables **(see Shen figure 3A where each virtual router has its own routing table and col. 5 lines 26-53)**, building the exterior gateway routing table **(see Shen col. 2 lines 51-67)**; logical interface **(see Shen col. 3 lines 15-23)**, and next hop interface **(see Shen col. 4 lines 25-45)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the virtual routers and routing tables as taught by Shen in the packet switching apparatus of Miki et al. in order to Provide virtual routers and capability of a single network element to behave as multiple routers.

Regarding claim 19, Miki et al. teaches further comprising: at least one third logical interface, wherein

- the third logical interface serves as the second logical interface of a first virtual router of the plurality of virtual routers and also serves as the first logical interface of a second virtual router of the plurality of virtual routers, and a packet is transmitted and received between the first virtual router and the second virtual router via the third logical interface **(see figure 1 where first tunnel (TL12) have first and second logical interfaces at AN11 and AN13, and it is inherent that for system to have the third logical interface serves as the second logical interface of a first virtual router of the plurality of virtual routers and also serves as the first logical interface of a second virtual router of the plurality of virtual routers)**.

Regarding claim 20, Miki et al. teaches in a case where the logical interface identifier is not directly related to the physical interface identifier **(see paragraph 42 input port and input tunnel ID are two different identities)**,

Miki et al. disclose all the subject matter of the claimed invention with the exception of:

- the interface table includes an independent entry including the logical interface identifier but excluding any of the physical interface identifiers, and
- a packet received by the communication I/F is subjected to a protocol processing by corresponding one of the virtual routers based on an entry including corresponding one of the physical interface identifiers of the

interface table and then subjected to a protocol processing by corresponding one of the virtual routers based on an entry including corresponding one of the virtual interface identifiers of the interface table

Shen from the same or similar fields of endeavor teaches the use of virtual routers and routing tables **(see Shen figure 3A where each virtual router has its own routing table and col. 5 lines 26-53)**, building the exterior gateway routing table **(see Shen col. 2 lines 51-67)**; logical interface **(see Shen col. 3 lines 15-23)**, and next hop interface **(see Shen col. 4 lines 25-45)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the virtual routers and routing tables as taught by Shen in the packet switching apparatus of Miki et al. in order to Provide virtual routers and capability of a single network element to behave as multiple routers.

6. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miki et al. and Shen in view of Forslow (US2002/0133534).

Regarding claims 13 and 15, Miki et al. disclose all the subject matter of the claimed invention with the exception of the memory stores a sequence for generating L2TP tunnels and a sequence for terminating the L2TP tunnels corresponding to received packets, and the processor reads and executes any of the sequences to realize the LAC function and LNS function; the processor has a setting means for determining which of the sequences is to be read, and switches between the LAC function and the LNS function by the setting means.

Forslow from the same or similar fields of endeavor teaches the use of packet's sequence number to protect against replay attacks **(see Forslow paragraph 158)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the packet's sequence number as taught by Forslow in packet switching apparatus of Miki et al. in order to provide protection against replay attacks and long term protection **(see Forslow paragraph 158)**.

Response to Arguments

7. Applicant's arguments, see applicant's remarks, filed 4/29/2008, with respect to claim objection have been fully considered and are persuasive. The claim objection of claims 8 and 18 has been withdrawn.

8. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Beser et al. (US6754622) disclose method for network address table maintenance in a data-over-cable system using destination reachibility.

Puthiyandyil et al. (US7225236) disclose load balancing between LNSS using virtual LNS with minimal LAC configuration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WUTCHUNG CHU whose telephone number is

(571)270-1411. The examiner can normally be reached on Monday - Friday 1000 - 1500EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571 272 7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WC/
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Supervisory Patent Examiner, Art Unit 2619